5 RECONSTRUCTION MODULE

5.1 Objectives

5.1.1 Understand and explain the components of video cassettes and the various types of video players /recorders.

5.1.2 Understand and explain the components of an audio cassette and the various types of players/recorders.

5.1.3 Understand and explain how audio and video signals are recorded onto magnetic media and digital media.

5.1.4 Gain the capability to splice both audio and video media.

5.2 Methods of Instruction

5.2.1 Lectures

5.2.1.1 How video recordings are produced.

5.2.1.2 How audio recordings are produced.

5.2.1.3 Video formats

5.2.1.4 Audio formats

5.2.1.5 How VCR's function

5.2.1.6 How audio recorders function

5.2.1.7 How digital video recorders function

5.2.1.8 How digital audio recorders function

5.2.1.9 Evidence handling and note taking.

5.2.2 Literature Review

5.2.2.1 Inglis, Andrew F and Luther, Arch C. Video Engineering. 3rd edition. McGraw-Hill: New York, 1999.

5.2.2.2 Davies, Adrian and Fennesy, Phil. Digital Imaging.4th.edition. Focal Press: Oxford, 2001

5.2.2.3 Blitzer, Herbert L and Jacobia, Jack. Forensic Digital Imaging and Photography. Academy Press: San Diego, 2002.

5.2.1.4 Equipment and Software User's manuals

5.2.1.5 Reconstruction, audio and video sections of the Departments of Forensic Science – Imaging/Audio Procedure Manual.

5.2.1.6 Digital Audio Processing Training Manual 2nd. Edition, Digital Audio Corporation, 2001.

5.2.1.7 Pohlmann, Ken C. Principles of Digital Audio, 4th. Edition, McGraw-Hill, 200.

5.2.1.8 Additional publications as they become available

5.2.3 Demonstration

- Basic reconstruction techniques will be observed and evaluated from beginning to end and notes will be taken by the trainee. This notes and techniques will be reviewed by the section supervisor.

5.2.4 Laboratory Exercises

5.2.4.1 Audio media reconstruction to include standard and micro cassette

5.2.4.2 Video media reconstruction to include VHS and HI 8.

5.2.4.3 Casework will be completed by trainee under direct supervision of the Section Supervisor. The content and techniques used will be dependent on the type of cases submitted.

5.3 Evaluation

5.3.1 Oral/ Written Examination

5.3.1.1 Oral review on each technique and procedure utilized in this section.

5.3.1.2 Technical paper on how video recordings are produced (concurrent assignment with video module).

5.3.1.3 Various techniques and terms to be defined both orally and written

5.3.2 Laboratory Testing

- The trainee must complete at minimum of 9 months of casework under direct supervision of the Section Supervisor. This will include mock and actual cases.

5.3.3 Oral Exercises

- Technical review sessions

5.3.4 Courtroom Exercises

- Trainee must show the ability to defend the conclusions of the examinations and answer technical questions in a courtroom scenario. The trainee MUST successfully complete this portion of the requirements.

5.4 Examination Questions

5.4.1 What are the dimensions of the typical VHS media?

5.4.2 What are the dimensions of the typical audio media?

5.4.3 Explain the inter workings of the video cassette and their functions.

5.4.4 Explain the inter workings of the audio cassette and their functions.

5.4.5 Define helical scan.

5.4.6 Demonstrate and explain the tracks which are recorded onto video media.

5.4.7 What is the speed of the video head when engaged?

5.4.8 In SP mode, how fast is the video media moving past the head? In LP mode? In EP mode?

5.4.9 Explain the mechanics of the VCR and the video cassette as they relate to one another.

5.4.10 How much media is present in a typical 90minute cassette?

5.4.11 Demonstrate and explain the tracks which are recorded onto an audio media.

5.4.12 Explain why there are different audio cassettes available.

5.4.13 What is bias?

5.4.14 Define voltage.

5.4.15 Define wattage.

♦**End**